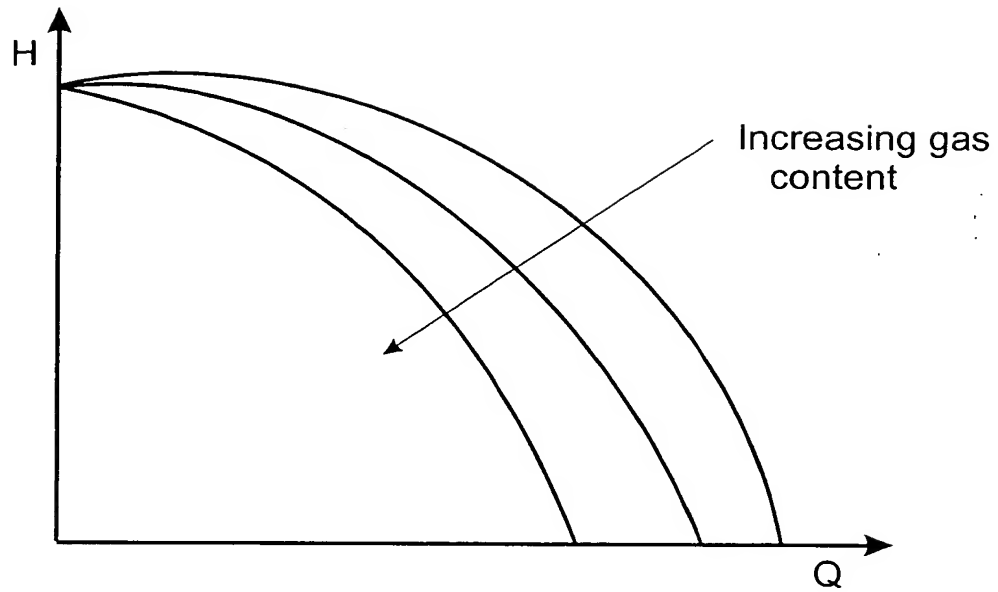


1/10

**FIGURE 1**

10030109 032002

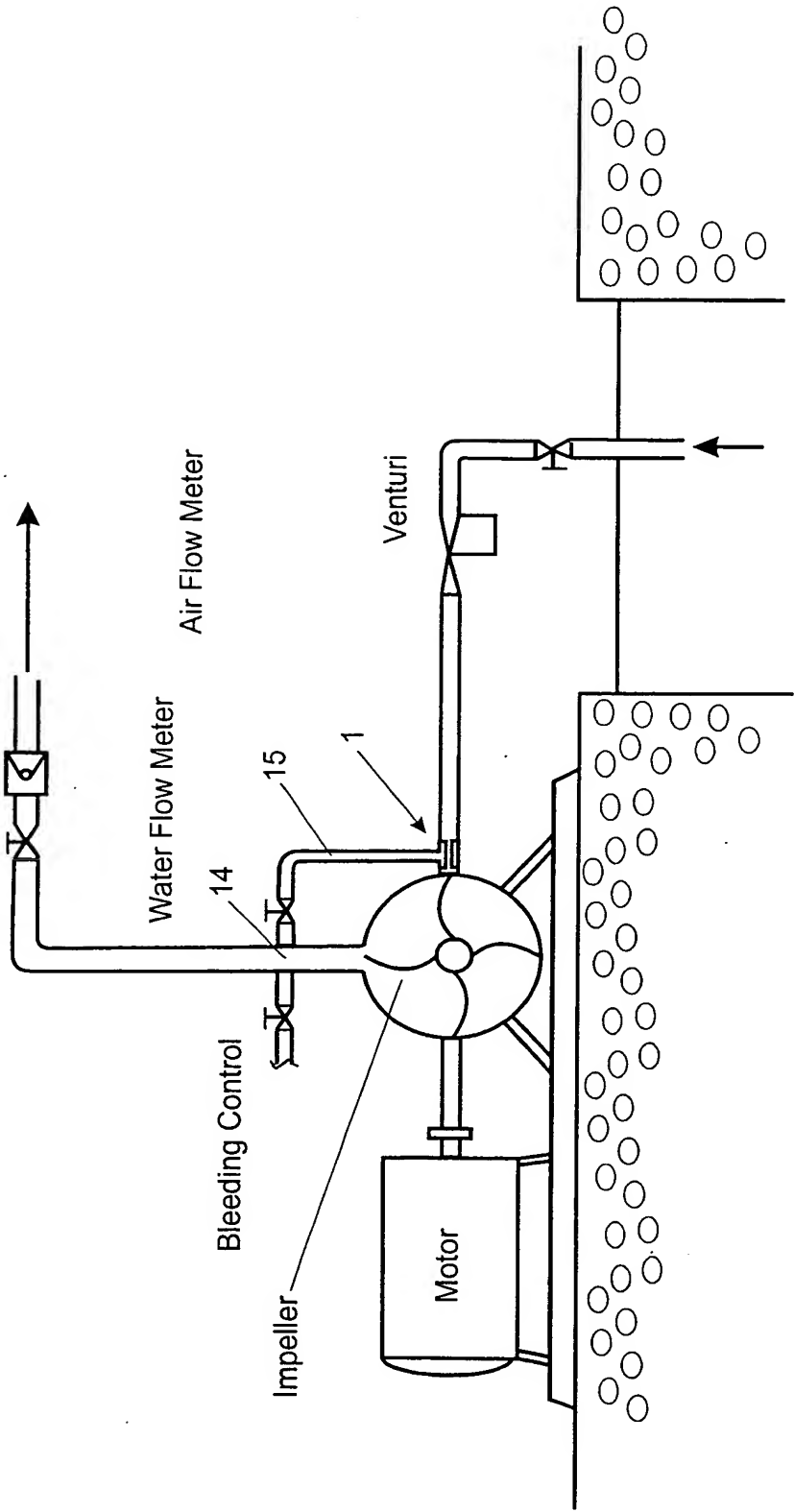
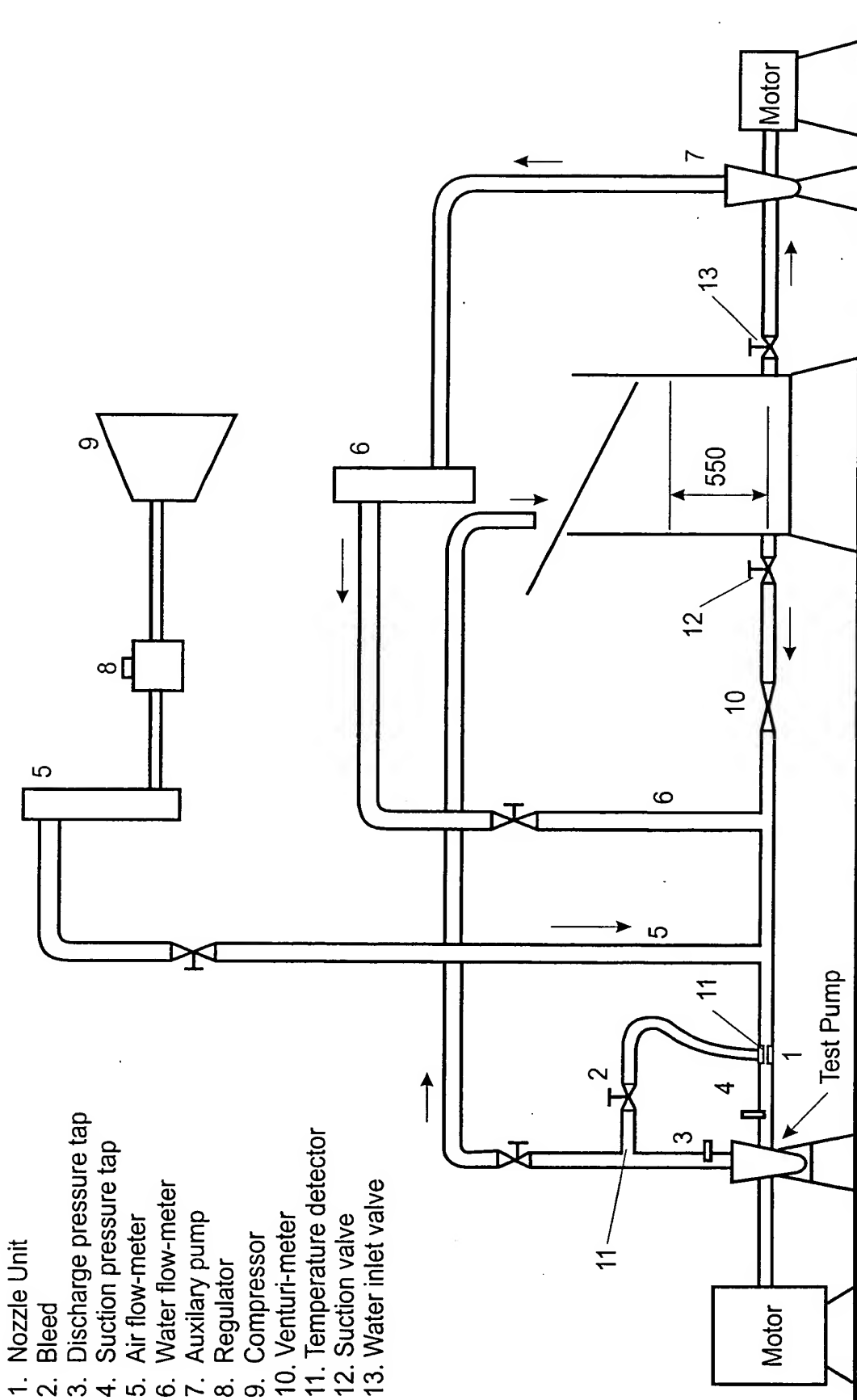


FIGURE 2



1. Nozzle Unit
2. Bleed
3. Discharge pressure tap
4. Suction pressure tap
5. Air flow-meter
6. Water flow-meter
7. Auxiliary pump
8. Regulator
9. Compressor
10. Venturi-meter
11. Temperature detector
12. Suction valve
13. Water inlet valve

FIGURE 3

4/10

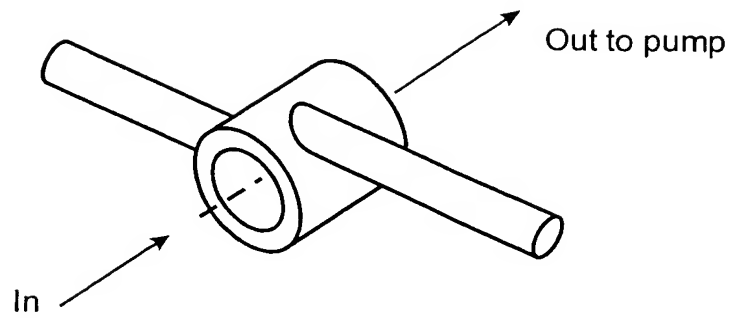


FIGURE 4

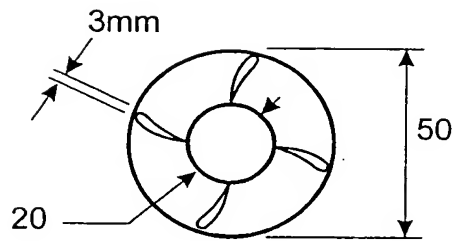


FIGURE 5

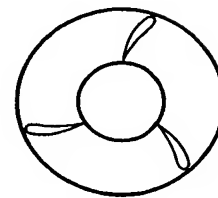


FIGURE 6

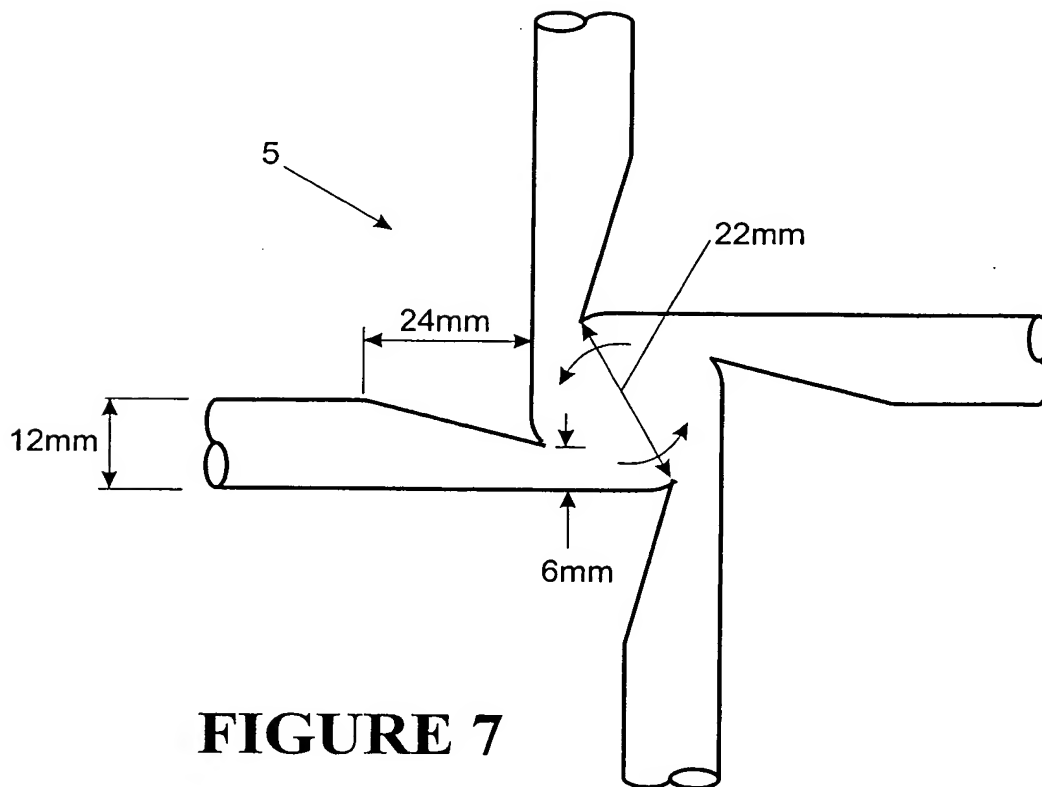
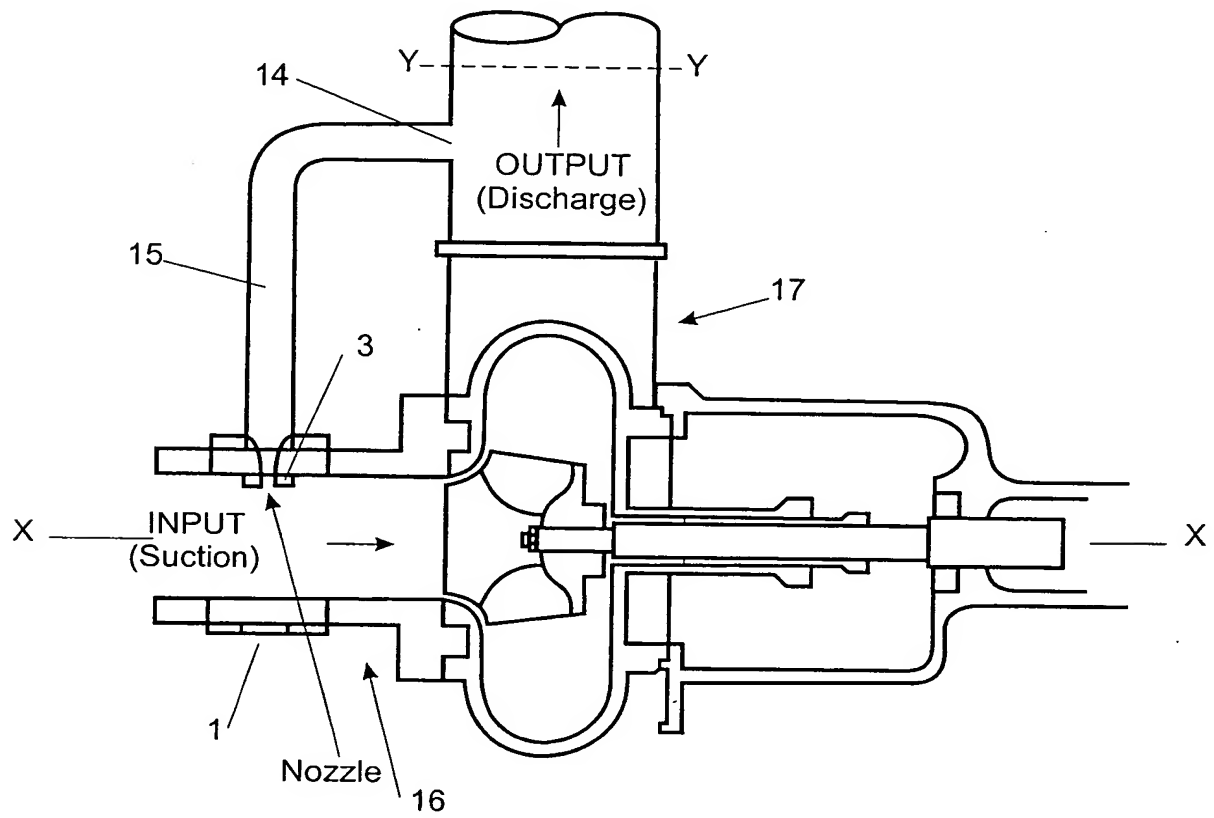
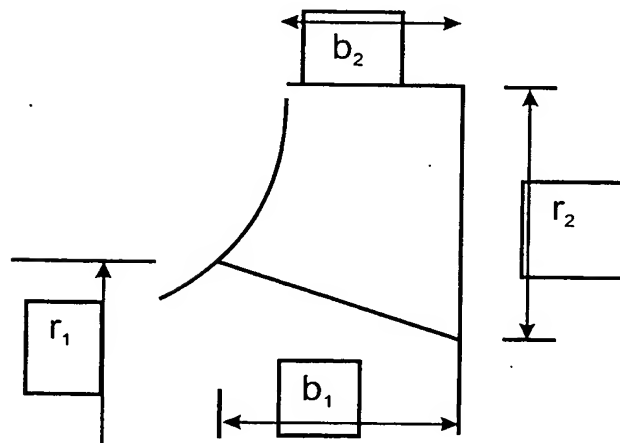


FIGURE 7

10030109.032000

5/10

**FIGURE 8****FIGURE 9**

100% Water		3 Vane Impeller: Air/Water Mixture - Intake air pressure 30psig															
		10%				20%				30%				40%			
		Q(L/s)	H(m)	η_o (%)	Bhp (kW)	Q(L/s)	H(m)	η_o (%)	Bhp (kW)	Q(L/s)	H(m)	η_o (%)	Bhp (kW)	Q(L/s)	H(m)	η_o (%)	Bhp (kW)
	1	0.9	0.84	0	0.83	0.41	0.21	0	0.83	0.41	0.21	0	0.83	0.41	0.21	0	0.83
	1.9	2.3	2.5	3.6	2.3	2.6	2.9	3.1	2.2	2.5	2.8	3.2	2.1	2.4	2.7	3.1	1.8
	75	82	83	0	75	43	24	0	72	40	23	0	69	39	22	0	59
	0.18	0.2	0.2	0	0.18	0.1	0.06	0	0.18	0.1	0.06	0	0.17	0.1	0.05	0	0.14

		3 Vane Impeller: Air/Water Mixture - Intake air pressure 30psig															
		60%				70%				80%				90%			
		Q(L/s)	H(m)	η_o (%)	Bhp (kW)	Q(L/s)	H(m)	η_o (%)	Bhp (kW)	Q(L/s)	H(m)	η_o (%)	Bhp (kW)	Q(L/s)	H(m)	η_o (%)	Bhp (kW)
		0.83	0.41	0.21	0	0.83	0.41	0.21	0	0.83	0.41	0.21	0	0.83	0.41	0.21	0
		2	2.4	2.7	3	1.9	2.3	2.5	2.9	1.9	2.3	2.5	2.7	1.85	2.3	2.4	2.7
		65	39	22	0	62	37	21	0	62	37	21	0	61	37	20	0
		0.16	0.09	0.05	0	0.15	0.09	0.05	0	0.15	0.09	0.05	0	0.15	0.09	0.05	0

FIGURE 10

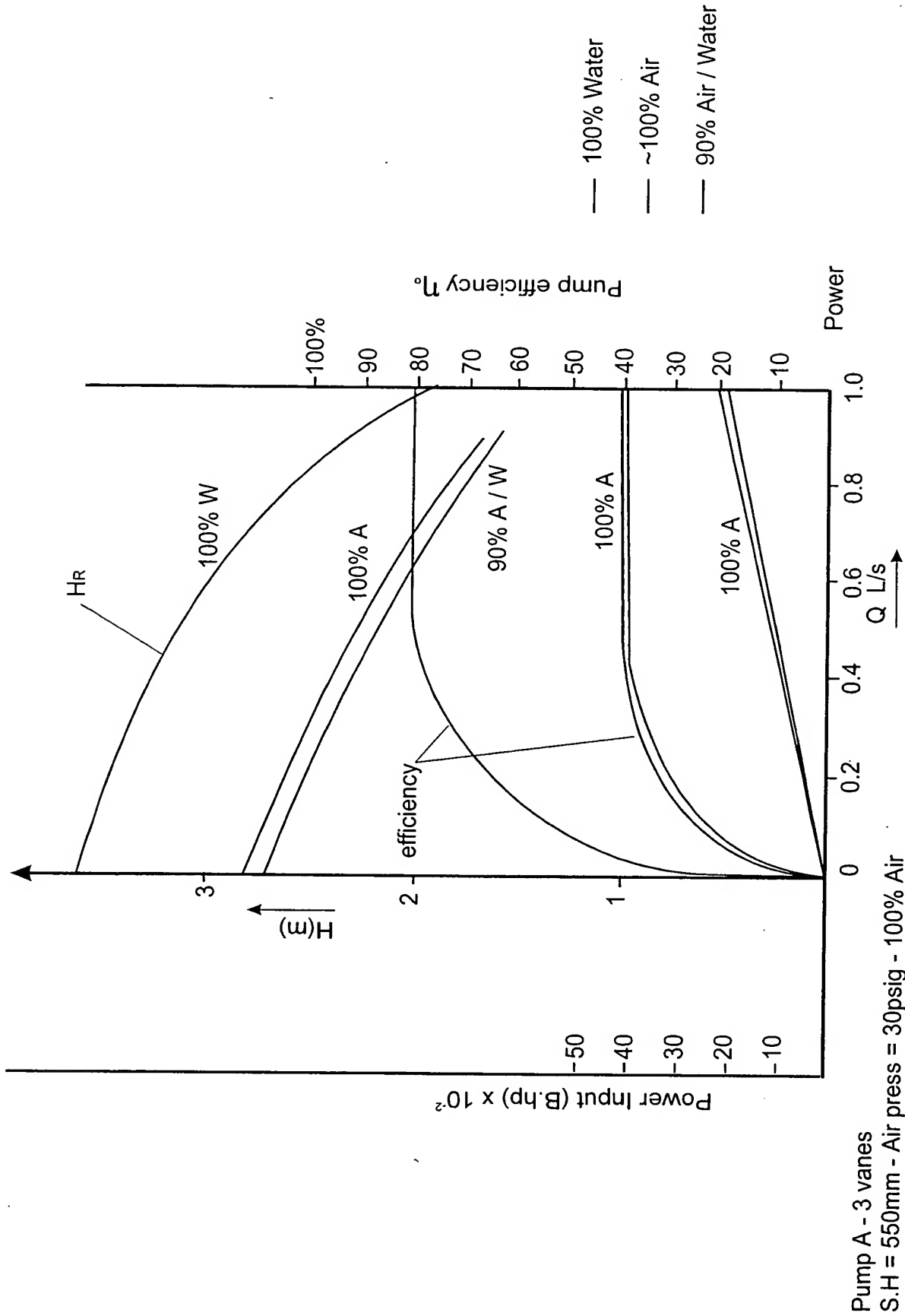


FIGURE 11

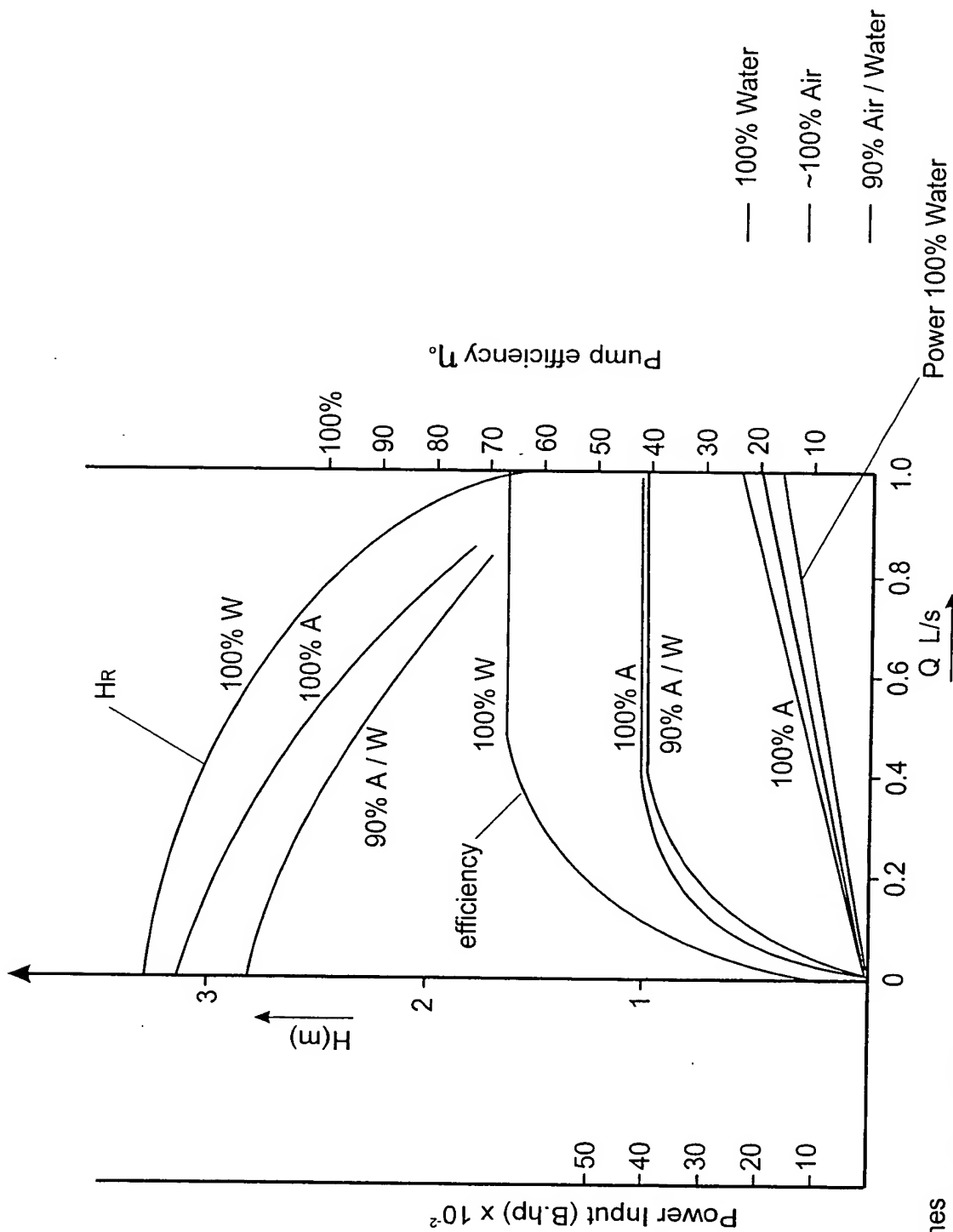
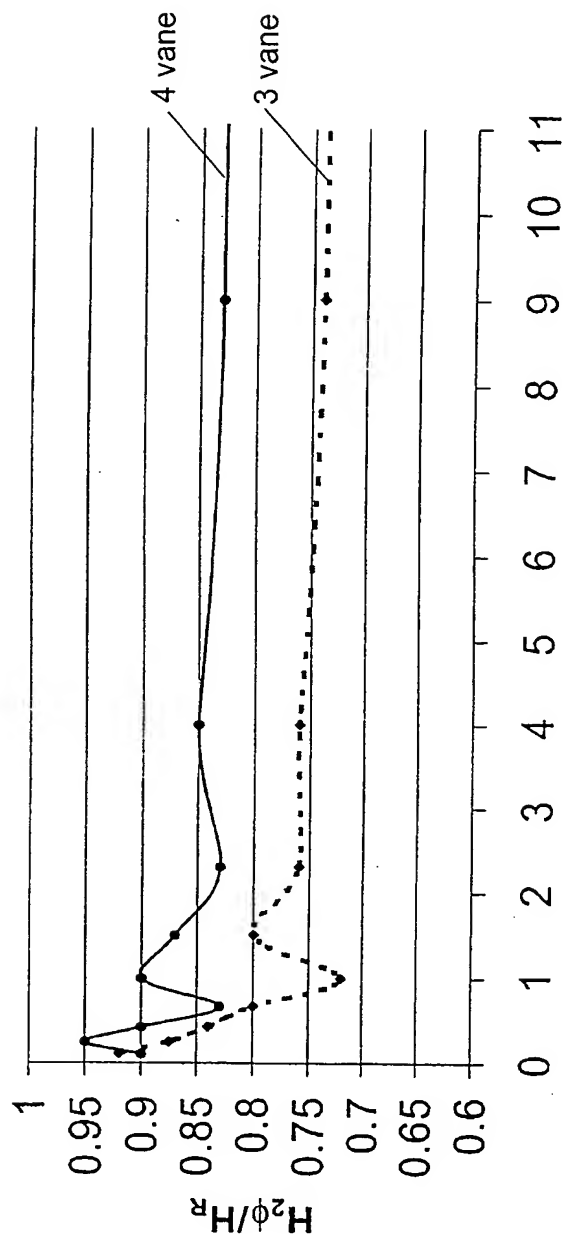


FIGURE 13

Pump A - 4 vanes
S.H = 550mm - Airpress = 30psig

$H_2\phi/H_R$	4- vane	3- vane
0.11	0.9	0.92
0.25	0.95	0.88
0.43	0.9	0.84
0.67	0.83	0.8
1	0.9	0.72
1.5	0.87	0.8
2.3	0.83	0.76
4	0.85	0.76
9	0.83	0.74
50	0.83	0.72

FIGURE 14



Pump Suction Void Fraction, α_s

FIGURE 15